





**GREENWICH RAILWAY AND THE TRAMWAY TUNNELS.**—A new station here is erected, and will be opened in a few days, so as to afford facilities to the public walking their way from the north side of the river and numerous docks to Greenwich, &c. It is situated at the bye-road boundary, midway between London and Greenwich.



I am sorry to hear that you are about to see a report in the Willard Chronicle  
concerning the article you are publishing for a book in my connection. The report was  
unintentionally of the character of it. I will send you a statement that day when which  
will show that the article in the Chronicle was published for the purpose of the article,  
and that the article in the Chronicle was published for the purpose of the article.

In Mr. Kewley's report upon the use of coal, it is observed, that "the train was discharged from the chimney in such dense volumes that the engines and engine-men were in constant fear of the goods being burned. The consumption on the North Midland Railway in these trials was 25 per

These improvements consist in accelerating the operation of converting soft iron into malleable iron. It consists in removing the metal, in a solid state, after the rolling process is complete, from the refinery into the puddling-furnace, through a passage that connects the two furnaces. The metal is then puddled, and divided into lumps or balls, as usual, in readiness for passing between the rolling cylinders, or other operation used for compressing or forging the iron.

**LONDON AND BIRMINGHAM RAILWAY MEASURED BY FOUR.**—If the use of money expended in making the London and Birmingham Railway is turned into pence, which measure 1-4 inches wide, and priced in a line, or touching the other, the length of that line would be 55,910 miles, or considerably over twice the circumference of the earth.



**ON THE BEST FORM OF RAILS AND THE UPPER WORKS  
OF RAILWAYS GENERALLY.**

In submitting a paper on this subject to the British Association, Prof. Vignoles said he wished to compare the two chief systems of laying down rails, with chairs and without, and to do so he referred to two diagrams—No. 1 exhibiting the heavy rail and heavy chair used on the South-Eastern Railway, the weight of rail being 80 lbs. per yard, and the chair 50 lbs.; the rail was fastened in the chair, not with iron, but with a longitudinal plug or key of wood; this mode of laying rails was found to answer very well. No. 2 was invented by Mr. Evans; it was rolled with a slot or groove running along its under side; this slot, after coming from the first rollers, was rendered dovetailed by compressing the bottom edges of the rail towards each other, thereby narrowing the slot at the bottom. These rails required no chairs, having continuous bearing on longitudinal wooden sleepers, being fastened down by bolts, with dovetailed heads slid into the groove and which, passing through holes in the timbers, were secured with a nut and washer at the under side. He had suggested this improvement, as they had been previously fastened with a cotter. By this method all the difficulties attendant on fastening down the chairs were removed. The chairs had been fastened with bolts and screws, but he had found that on the slightest loosening the bolt-heads flew off, from the continual percussions, and the screws very soon allowed vertical play from the yielding of the fibre of the wood. By Evans's rail we secured the rail without the intervention of the fibre of the wood. One inconvenience attending it was, the trouble of scraping away the earth to tighten the nuts when necessary; but this might be partially remedied by placing the bolts as often as possible in the transverse gutters for draining the road, by which at least one-half the bolts might be easily got at; and the difficulty of tightening the remaining bolts would be lessened, if, as he recommended, the timbers were left uncovered. He preferred thus giving a free circulation of air, and disliked burying the sleepers in ballast. The weight of Evans's rail was only 55 lbs. per yard, although quite strong enough, while the other was 100 lbs. The level in No. 2 rail might be given in the wood bearing; in No. 1 it was caused by the casting of the chair; this latter rail, from having its top and bottom sides alike, had this advantage, that when it began to wear, it might be turned round, or even turned upside down, which was a very great advantage. He had for many years advocated wooden sleepers *versus* stone, from his experience on the Dublin and Kingstown Railway, where he found that the granite sleepers, the more massive they were, the more injurious to the rails and carriages. These had all been taken up, and wooden sleepers laid down, and the saving in expense of repairs would, in a few years, reimburse the outlay. The railway only costs now 50*l.* per mile per annum for repairs, notwithstanding the great traffic over it. The rails were the old 42 lbs. rails, and, nevertheless, were still used, in consequence of the advantage gained by the wooden sleepers. He recommended keeping Evans's rail to the gauge by light iron rods passed through holes in the rails, and secured by nuts; he thought these transverse ties should never be used as supports.—Mr. Bucke remarked that the rails on the North Union had already been so worn as to require turning. The section of Evans's rails was bad, as, from the squareness of the top, the wheel would not bear on the centre of the rail. He had used these rails a little himself, and had no objection to them for light work. He had remedied the form of rail on the Manchester and Birmingham Railway, so as to give the wheels a bearing on the centre of the rail. He conceived a great disadvantage in the longitudinal continuous bearing was, that the foundation was so near the surface; the stability of the foundation was as the square of the depth, and, therefore, the necessarily narrow foundation of the continuous bearing was rendered still weaker by its proximity to the surface, and the plan of laying down a railway "like a ladder on the ground," had failed where it had been tried.—Prof. Vignoles considered that the failure to which Mr. Bucke alluded, was from making the transverse ties too strong.

A PROFESSOR OF MINERALOGY AT CHRISTIANIA.—I found the learned gentleman in a low room about ten feet square, at the end of a dark covered way which was entered from the street, and across which was a gate with broken hinges; the window of this apartment looked on a dirty courtyard lumbered up with tubs, an old cart, and a barrel or two of earth containing ore to be analysed. But the room itself was even worse than its situation, and its multifarious contents more difficult to analyse than the ore. It contained in one corner a small dirty bed; and on one side was a bookcase, from the dusty top shelf of which, by mounting upon one of the three old crazy chairs, he handed a book down to me. On another side stood an antique clock, its face covered with figures and divers circles, emblematic, no doubt, of the mystic religion of Norway. On the wall were hanging thermometers, barometers, and hydrometers, and every other sort of ometer, numberless, dusty, and mysterious; loadstones with weights attached to them; scales, pendulums, and an endless *cetera*. Opposite to these was an old bureau full of mineralogical curiosities, among which he showed me an earth previously unknown which he had lately discovered, and a crystal not yet observed by any other person, and such like marvels. All these were lying in confusion confounded, amidst pots and pans, basins, crucibles, receivers, retorts, bottles of every sort, shape, and size, and flanked with shelves of every kind and form; his large table covered with tablets, manuscripts, and books, cups, funnels, and every denomination of vessels, baffled all description. When I disturbed him he was engaged in analysing some specimens of minerals; but, to my taste, he was by far the most extraordinary specimen of all. Fancy a little dirty old man, with blear eyes, whose face looked as if it had not been washed any more than his originally white, now dark brown night-cap, since his spectacles were made, and the furrow they had worn upon his nose showed their use had been of some years' standing, and to augment his beauty, a huge black plaster was stuck on one temple; he wore a dirty shirt crusted with snuff, a gay coloured waistcoat reaching over his hips, a brown coat and trousers far too wide for his shrunken shanks, while a pair of immense slippers completed the costume of this subterranean octogenarian, or I may say, subterranean profligy. Despite his rough and unpromising exterior, his manners were not only agreeable, but polished; and he very kindly showed me his collection of minerals, which is valuable and well arranged. He was a pupil of Werner's, and is a man of considerable talent.—*Midford's Norway*.

THE PLEASURES AND ADVANTAGES OF SCIENTIFIC PURSUITS.—How fascinating is mineralogy! how instructive that science, which, from the crystal to the diamond, and from the drop of water to the starry orb above us, teaches the laws which regulate form, and which are as universal as they are powerful—as simple as they are sublime! How engaging is the knowledge comprised in the term physical geology—the history of the deposition of sedimentary substances by aqueous, and their disturbance by igneous, action—of the mighty contest between the opposing forces of fire and water, those antagonistic powers to which the Almighty has so admirably delegated the task of renewing and perpetuating the solid crust of the earth—their ceaseless strife issuing in order and peace, their apparent conflict harmonizing into beauty, fertility, and perfection! And, ascending to the animated objects of creation, how attractive is conchology—how admirable the lessons conveyed by this apparently subordinate, yet really important, study! How lively are the shells! how symmetrical! how beautiful! how vivid their coloring! how elegant their form! their conchologies, how delicate! their outline, how graceful! their adaptation, how skillful! their entire structure, how perfect! Passing onwards to small botany, how impressive is a study which, from a mutilated stem, or fragmentary leaf, or from the mere impression which these evanescent substances have stamped and “graven on the rock for ever,” enables us to restore the vegetation and temperature of the primordial earth, at a period when our English oaks were thick savannahs, thick and unadorned firs, or oak and swampy marshes, abounding in gigantic mosses, coral reefs, or huge aquatic plants; its forest groves of tree-ferns, palms, beeches, and bamboo—its climate hotter than the torrid zone! And, again, reverting to the animal population of those by-gone eras, how engaging is palæontology!—how instructive a study which teaches the changes in animal life consequent on variations of climate; the extinction and substitution of forms observable on our earth, astounding, as it has done, from corals, shells, and fish of forms wholly unknown at the present day, and in reptiles of dragon-like appearance, and colossal size; those, after an interglacial period, succeeded by animals of tropical forest and ocean—the elephant and mammoth, the megatherium and the slothbear, until the human gradually succeeded, and with it the types of existence, all the forms, by degrees presented, both in her temperature and in her animal capabilities form, the aspects which she wears at the present day!—G. F. R. S. LECTURE, F.R.S. *Concluding for Bingham.*

The importance attached to this case, which was an action brought by Mr. George Crane, of the Yonkersday Works, against the North Abbey Iron Company, for an infringement of his patent for the manufacture of iron with anthracite or stone coal, by the application of the hot-blast, has given rise to the remarks before us, and that there should be no mistake on the part of the reader as to the persons with which the author is actuated, he commences his task by informing us in the opening paragraph that the judgment of the court "has been received with surprise by many persons, who, knowing the success and efficacy of the hot air-blast, invented by Mr. Neilson, had conceived the opinion, that, with his license, it was open to adoption by any ironmaster, who desired to apply it to his furnace, without regard to the nature or species of the coal on which it was employed to operate." This may be all very true, many are there, who are, at all times, ready to take advantage of the inventions of others, considering them *pro bono publico*, and that the inventor should be satisfied with having proved, in practice, the correctness of the theory, and who should, therefore, be left to "pay for his while." There are, doubtless, many others, who, innocent souls, have not the slightest idea what is the nature of a patent, and, therefore, unintentionally invade, or evade it, but that Mr. Fris, the defendant, was not one of the many of either class we have described, is pretty clear by the evidence adduced on the trial, and, we believe, if there were "many" who entertained the visionary notions which our author is disposed to believe they had conceived, the judgment of the court has, we are glad to find, corrected those opinions, and which we hope will have the effect of preventing them from again unconsciously falling into error.

Our author says, that "the confirmation to Mr. Crane of his patent for the monopoly of the hot-blast, when applied to a furnace working with stone coal (a fuel in *partial* use in the blast-furnace prior to his patent), appears to some persons to be a direct interference with a vested and indefensible public right, and they (?) incline to think rather that the judgment has proceeded on some misapprehension of facts, than that the public can be deprived, under the authority of the law, of a right which they (?) conceive to be pre-existent and paramount." With this flourish of trumpets, as to the opinion of "the many," the author opens his budget, and then proceeds to examine the validity of the right contended for, as well as the application of the law propounded by the judgment. It is fortunate for our readers—and, maybe, for the author—that we are not learned in the law, nor are we used to special pleading, but, as it is assumed there exists "some misapprehension of facts," we will endeavor to follow the representative of the "many" through his pamphlet, interposing such observations as his line of legal reasoning may appear to call for. It is hardly necessary to observe on the absurd attempt, in the passage we have just quoted, to cast an oblique on the monopoly of Mr. Crane, which we are told is confirmed—when it is notorious that all patents may be viewed as monopolies, inasmuch that the patentee might even preclude the use of the invention he had patented, by making an extravagant charge for its application—but, as we believe the object of patentees generally is to bring their patent into general use, and to obtain remuneration therefrom, and as, in this instance, we believe that Mr. Crane charges only a ton or pig-iron manufactured under his patent, it is hardly fair to raise the cry of monopoly. But, proceed we to the logical and legal reasoning of the author, who we again quote—

The judgment is founded on a principle: the law of patents, well recognized and admitted, that a patent may be good for a new combination of old materials or implements producing new and beneficial results. The proposition is indubitable, by its authority a large portion of the numerous patents now in existence are supported; and such combinations are not only a most fertile source of patents, but they are often the product of the highest order of invention. But whilst combinations of old materials or implements may be the means of producing new and beneficial results, combinations of old patents, other so called combinations are, or may be, merely the application of an original complete design to objects, substances, or uses, which, though they may not previously have attracted special notice with reference to the original invention, were yet clearly included in it, and comprised within the very terms of the patent granted for it, and which application neither required nor produced any new contrivance. Combinations of the latter character are not protected by the law as a new class of patents, but in patent claims combinations within the scope and design of the original invention would be to expose the public to a perpetuity of monopoly.

Now, on this argument appears in his the merits of Mr. Crane's patent, and were we to attempt to answer the learned writer or compiler of the "Remarks" before us, we feel assured that common-sense or reason, or exposure, would at once set aside the special pleading or legal reasoning founded on the technical constructions resorted to, as to the meaning or application of words. We do not, however, profess to assume this office, for, as Mr. Howland considers himself a fitting censor for the judge, we doubt not that others will be found who, forming a correct judgment on the merits of the case, may consider themselves fully competent to reply to him, and may, at least, turn the tables, by adopting his arguments, and forthwith reasoning thereon. We are led, for instance, by the author, that "on a principle in the Law of Patents, well-recognized and admitted, that a patent may be good for a new combination of old materials or implements producing new and beneficial results." Now, we would ask Mr. Howland, with all his legal knowledge, added to the theoretical and practical experience in the manufacture of iron acquired by him, whether the patent secured by Mr. Crane is not, in fact, "a new combination of old materials or implements, producing new and beneficial results?" For we have evidence that the British Iron Company, with a partial use of anthracite, could only make iron at a loss—that eight years of Nilsson's patent had expired ere that of Crane's was secured, and, thus, that the result of Mr. Crane's "invention," after a large expenditure of time and money, has effected that which was before considered insurmountable, and the beneficial results of which are now appreciated.

Mr. Howland, who the object of proving his case, brings forward the evidence of M. Dufrenoy, emitted from his report "On the Use of Hot Air in the Iron Works of England and Scotland," in which the process attendant Mr. Neilson's patent is described, all of which only tends to prove the value to be attached to the application of the hot-blast in the manufacture of iron, but says and uses word of anthracite, for the best of all reasons, because its use was never contemplated by Mr. Neilson or M. Dufrenoy, and the report being one of an elaborate nature, is, we think, conclusive that no idea had, at the period of its publication, been entertained of hot-blast being applied to the smelting of iron with anthracite. That the evidence thus afforded should have the weight of *concoctive* testimony, we have the opinion expressed by Mr. Mosher, on his recent examination at the trial, when he stated that "the advantage of the hot-blast is the saving of less fuel, making more iron, and using fuel that could and be used without it." In this opinion we fully concur, for Mr. Mosher has had the proof demonstrated in the application of the hot-blast to anthracite, and no one is more capable of forming a correct opinion than that gentleman, but the writer of the "Remarks" omits to draw attention to the fact—one of those on which we present some "misapprehension" is said to exist—that Mr. Mosher's evidence was the result of experience, and the application of hot-blast to anthracite under Mr. Howe's patent was one of those practical points on which his evidence was based. The author next proceeds to a review of the trials made in the use of coke coal, which, he tells us, is "now diffused with the geological application of anthracite." It appears that in 1826 Mr. Harper succeeded in smelting iron with stone coal at Abercrombie; the furnace erected by him was sold to the British Iron Company, who worked it for ten or twelve months, using nearly equal quantities of stone coal and coked bituminous coal. Under the system of Mr. Mosher the furnace was blown out, as it did not pay. Mr. Howland, however, while, that it is not surprising that in one small furnace, worked with imperfect machinery, iron could not be made with a profit—the surprise being rather that with such appliances an average quality of iron was produced; this is sought after but *special* blowing, but if best of average quality could be made—and that the only cause of profit not being made was the disadvantage of the furnace, and the machinery being imperfect—we would ask, how was it that the British Iron Company, with a capital of £1,000,000, did not think it worth while to increase the furnace, and improve the latter, so as to render available a process which they had made? It is well to observe on this part of the remarks, that the iron so manufactured was made from the application of cold blast.

[illegible]

*Newton's London Journal, and Repository of Arts, Sciences, Manufactures, &c.*

The Number of the periodical for the present month is of an unusually interesting character, containing, besides numerous specifications of patents, several scientific papers of much interest, and, as evidence of the importance we attach to its contents, have transferred into our columns of this week three specifications:—"On Improvements in the Manufacture of Sulphur";—"New Method of Bleaching and Refining Copper";—"Improvements in the Manufacture of Iron"; and, in our next, intend to publish that of Mr. Poole, "for an Invention of Improvements in Producing and Applying Heat," accompanied by diagrams. The plates, illustrative of the patents, are clear and neatly executed, and, altogether, the work of Messrs. Newton will be found of great utility to those interested in improvements in arts and manufactures.

## NEW MACHINE FOR FORGING IRON AND STEEL

Although at the late meeting of the British Association in Manchester, there were many very interesting specimens of mechanism exhibited, there was, nevertheless, one in particular, which threw all others completely into the shade, when considered either as to the novelty of the invention, or its evident practical applicability to the every day concerns of life—and may with truth be said to have been “the lion of the exhibition,”—viz., a machine for the working or forging of iron, steel, &c. This truly surprising machine is quite portable, occupying only a space of three feet by four feet, and cannot be deemed other, even by the most critical judges, than one as purely original in principle, as well as practical in its application, inasmuch as, perhaps, as was the splendid invention of the fluted roller of Newkirk, by which the art and perfection of drawing the fibrous substances became known; or that still more splendid discovery of Watt, the condensing of steam in a separate vessel, by which the power of the steam-engine of that day may be said to have been doubled. But now for some explanation of the machine, and its probable general application. It is, then, as has before been said, very portable, not requiring more space than from three to four feet, and may be worked by steam or water-power, and when moved by the former, as was the case at the exhibition, made 650 blows or impressions per minute; but from their very quick succession, and the work being effected by an eccentric pressing down on the striking the hammer or swage, not the least noise was heard. There are five or six sets of what may be called anvils and swages in the machine, each varying in size. The speed and correctness with which the machine completes its work, is perfectly astonishing, and must be seen in order that its capabilities in this respect may be duly appreciated; for instance, when it was put into motion, for the purpose of producing what is known as a roller, with a coupling square upon it (and which had to be afterwards turned and fluted), the thing was accomplished in fifteen seconds! of course at one heat, to the astonishment of the bystanders. The most appeared as the most extraordinary part of the affair, was that the coupling square was produced direct from the machine, so mathematically correct, that no labour can make it more so! The machine will perform the labour of three men and their assistants or strikers, and not only so, but complete its work in a vastly superior manner to that executed by manual labour. For engineers, machine-makers, smiths in general, die makers, bolt and screw makers, or for any description of work, parallel or taper, it is most specially adapted; and for what is technically known as reducing, it cannot possibly have a successful competitor; in proof of which it may be stated, that a piece of round iron  $\frac{1}{2}$  inch in diameter, was reduced to a square of  $\frac{3}{8}$  in., 2 ft. 5 in. long at one heat. The merit of this invention belongs, it is said, to a gentleman at Bolton, of the name of Ryder.—*Leeds Mercury.*

**TRUCK SENTENCE.**—At the Abercromby Petty Sessions, a case of truck was brought forward by John Dainty against Ewen Jones, coal agent at the Cwm Celyn and Blaiddia Iron-Works, for paying Daniel Dainty for work done and performed otherwise than in the current coin of the realm, contrary to the statute, &c. Upon the summons being handed in by the office officer, Mr. J. Brown addressed the Bench, stating that in consequence of the absence of Mr. Baker, solicitor, from town, whom he intended engaging, professionally, to defend this case, he was reluctantly obliged to take an objection which otherwise would not have been raised.—viz., that the summons had not been legally served as the Act required. Mr. Owen endeavored to surmount this objection, and in terms not to be misunderstood, accused Mr. Brown of endeavoring to interfere with a witness, by intimidation, as well as by an offer of money—a charge which Mr. Brown, with indignation and vehemence, strongly denied.—his lod to very high words between the parties, which called for the interference of the bench, who, after a short consultation, decided that the objection raised by Mr. Brown was good and valid.

**Two-Boat on Two Uss.**—We understand that on Monday last, two gentlemen connected with a steam navigation company in London visited *us*, for the purpose of making inquiries respecting the trade and shipping of the port, with the view of establishing a steam tug on our river. If the prospects were such as to warrant such a speculation, they said very minute inquiries of the Harbour Master on the subject, and then the answers they received, as well as those their own observations, they expressed themselves satisfied that the undertaking would be a profitable one, and they left here for London, for the purpose of bringing one, one of the directors of the company to make arrangements for its execution establishment. We think it probable that we shall have a steam tug plying on our river by the middle of September next.—*Northampton Mercury.*

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## LAW INTELLIGENCE.

## BEAM GREAT CONSOLIDATED MINES.

STANNARIES' COURT, CORNWALL.

**MOYLE v. PINCH.**—Mr. Stokes and Mr. Borsari for plaintiff; Mr. Bernalack for defendant.—This was the case of a pursuer's petition by Mr. Samuel Moyle, as pursuer and book-keeper of Beam Great Consolidated Mines, in the parish of Roche, against Philip Pinch, an adventurer, to recover the sum of £100 on costs of one-fourth part of a 512th share alleged to have been held by defendant from June, 1836, to August, 1840, and of one-fourth part of a 264th share from August, 1840, to the 21st of August, 1841. The case was proved to a great extent by co-adventurers, whose evidence his Honour deemed admissible according to a statute which lately received the Royal Assent.—Richard Trethewey, a miner, was, in 1836, a clerk to Captain Robins, agent at Wheal Bream, and in that year received from the defendant, for Captain Robins, 21. towards his proportion of costs at Beam Mine.—Thomas Saeli, a farmer, was present at a meeting of adventurers at Beam Mine, in 1839, when Pinch was present; and also at a meeting in St. Austell, on the 12th of October, 1840, when he believes Pinch was present. Believes a signature pointed out in the cost-book to be Pinch's writing.—Walter Pearce was present at the meeting in St. Austell, in October, 1840. At the end of the meeting, heard Pinch ask Mr. Bell, the landlord of the Queen's Head, where the meeting was held, what he thought of the mine? Bell said, he did not know what to think. Pinch replied, "never mind, a little grog will pay our costs." Pinch kept a public-house near the mine. Pinch acted as a shareholder at that meeting, and signed the book. At that meeting the shares were changed from 512ths to 264ths.—Thomas Dyer, in the employ of Captain Robins, agent of Beam Mine, in October last went to defendant with Mr. Moyle and Mr. Robins. Mr. Moyle demanded of him costs of Beam Mine, 4s. 6d. Pinch said, he had got no more than his hands worked for, and therefore he could not think of adventuring in a mine like that. He said "he was not qualified to carry on a right in that mine."—James Jacob Borsari, solicitor, produced the cost-book of Beam Mine. Was present at a meeting of adventurers at the Union Hotel, in Truro, on the 27th of October, 1841. Resolutions were there carried, and entered in this book, and afterwards signed by the adventurers. More than two-thirds of the shares of the mine were represented. Mr. Borsari proved the defendant's signature to the resolutions, as well as to an entry of a meeting in January, 1841. Mr. Borsari then pointed out in the cost-book entries of costs opposite to defendant's name, up to August, 1841, all which, he said, were audited at the general meeting in October, 1841.

Mr. BERNALLACK, in addressing the court for the defendant, denied that any meeting of adventurers had the power to change the amount of shares (as in this case, from 512ths to 264ths), unless all the shareholders were present.—His Honour decreed for the plaintiff.

**MOYLE v. KNIGHT.**—Mr. Stokes and Borsari for plaintiff; Mr. Bernalack for defendant.—In this case, Mr. Samuel Moyle, as pursuer, petitioned for contribution of costs from Thomas Knight, an adventurer. The amount claimed was 30s. 1s. 6d., for the half of a 512th share from June, 1836, to August, 1840; and for two 264ths from August, 1840, to August, 1841. The defendant admitted that he had held the half of a 512th to August, 1840, and one 264th from that time.—After evidence, *pro* and *con*, his Honour decreed for the plaintiff.

## UNITED HILLS MINE.

**PAUL AND RICHARDS v. GARLAND.**—Mr. Stokes for plaintiff; Mr. Bernalack and Mr. Roberts for defendant.—This was a petition by two tributors against the pursuer of the United Hills Mine, for the recovery of 42s. 6d. alleged to be due in a tribute pitch at 10s. in the fifty fathom level, for January and February last. The defence was, that the ore on which the plaintiffs claimed tribute was not gotten in their pitch. Witnesses were heard on both sides, when the VICE-WARDEN said he could not sufficiently decide this case, involving, as it did, facts which it was the province of a jury to try; and his Honour directed an issue on the question, whether the plaintiffs had fairly "won" the heaps of ore to which they laid claim.

## MINING DISPUTES—WHEAL RAMOOTH MINE.

**STAINSBY AND OTHERS v. MOYLE.**—Mr. Stokes for plaintiff; Mr. Simmons and Mr. Hockin for defendant.—This was the case of a petition by Mr. Peter Stainaby and others, adventurers in Wheal Ramoath Mine, in Perran-sabuloe, against Mr. Samuel Moyle, as pursuer and adventurer. The mine had been worked from 1830 to the end of 1835 by a company of adventurers; and in 1836 the machinery, &c., was sold. The petition, after stating a variety of circumstances, and among them that petitioners had been adventurers from the commencement of the undertaking, and that other shareholders had come in at different times since, prayed that the defendant be ordered to render an account of all sums of money that had come into his hands as pursuer, of all ore got in the mine, of moneys received for such ore, and of all sums of money received and paid by him as pursuer. It also prayed that he be ordered to make known the shareholders and their proportions of shares, and all other matters relating to the working of the mine; and that an account be taken between the petitioners and the pursuer, or between the petitioners and the several adventurers in the mine.—Mr. HOCKIN now, on behalf of the defendant, demurred to the petition, on the ground that the petitioners had not made out such a case as entitled them to any relief in a Court of Equity. And first, because there were other parties necessary to the petition, who had not been included therein. Mr. Hockin here called his Honour's attention to the fact of several parties having become shareholders at different times, as late as 1833, and insisted that those parties were not entitled to ask for an account of all transactions of the mine from its commencement. They would be entitled to apply for an account only in respect of the periods during which they were adventurers. Mr. Hockin next observed, that the petition was from *part* only of the adventurers against the defendant, not only as pursuer, but as pursuer and co-adventurer with themselves; therefore the petition was for discovery and relief. Now, the law was well understood, that if a bill was filed for discovery and relief, the right of the party to discovery depended on his title to relief, and if he had not a right to relief on the bill there was an end of his right to discovery. He submitted that the plaintiffs' course should have been to apply for discovery in the first instance, and by such a petition they would have discovered the names of all the other adventurers in the mine. But if a party chose, in filing a bill for discovery, to pray for relief by the same bill, it was perfectly clear he must put himself in a situation to obtain that he seeks by showing that he is entitled to ask a Court of Equity to give him the relief he seeks. In the present case, so far as related to discovery of the names of co-adventurers and of the shares which plaintiffs held in the mine, and which they said they were unable to set forth, they did not show that they had ever made application for such discovery. Mr. Hockin next proceeded to show that plaintiffs were not entitled to the relief they sought. The petition was against the defendant, not only as pursuer but also as co-adventurer. The petitioners showed, on the face of the bill, that there were other persons who had not been made parties to the bill. The petition was, in effect, a partnership petition; and, being so, was against some partners only, all the other partners not being before the court. Mr. Hockin cited cases to show that, in order to prevent further litigation, all the persons materially interested, either legally or beneficially, in the subject-matter of a suit, were to be made parties, so that there might be a complete decree; and in the case of an account being sought against partners, all partners were necessary parties to the suit. He had not now to argue whether, if the defendant had been sued as pursuer only, the petition would be demurrable, because on the face of the petition he was described as pursuer and adventurer, and, if an account was taken between the plaintiffs and defendant, he would be entitled, if a balance should be found against him as pursuer, to say he would not pay, because he was an adventurer. Then, he submitted, that to allow a pursuer to give accounts to all the partners severally, would be to induce multiplicity of suits; and then the question arose, how far that account rendered to one partner would bind others. A decree accounts might be taken, and in such of those differences might arise. He submitted that a pursuer ought not to be subject to have fifty petitions filed against him, when an account ought to be taken of all by one petition; therefore a pursuer ought not to be called on to account, in the absence of other shareholders. Mr. Hockin urged that there was nothing in the present case to prevent the petitioners from joining other parties, and that the allegation that they knew not who the other parties were was absurd. Mr. Hockin further urged, that the pursuer, after having given an account to each partner individually, might still have one general bill against him by all the partners. On the grounds stated, he submitted that his Honour would prevent multiplicity of suits by dismissing this petition.

Mr. Stokes was about to argue in support of the petition, when the VICE-WARDEN said he could decide without hearing him, because, though the defendant might be proper as to some part, yet, as it concerned generally, he thought the defendant must be heard at once. The plaintiffs, co-adventurers, though not, perhaps, all the adventurers, had a right to know from the person to whom they connected the management of their affairs, what was the state of their mine accounts, and who were their co-adventurers; and, though Mr. Hockin truly observed, that in ordinary partnerships it seemed ridiculous that partners should not know their co-partners, yet the peculiarity of mining adventures accounted for the allegations, that the petitioners could not know their co-adventurers, or the amount of their own shares, except by looking at the books kept by the pursuer; and they have a right to know the amount of their shares and the state of their co-adventurers. But the great objection to be urged on behalf of the defendant was, that he was alleged to be pursuer and partner—now, therefore, this is a partner's suit, and all the partners should be joined. It may be that there were no other partners. The plaintiff did not know if there were any, and he wanted to know. His Honour did not see why the two characters of pursuer and ad-

venturer being in one person made any difference. The suit was for a partner's account; it was a common case for the pursuer to be an adventurer, and they knew that a pursuer's accounts were kept totally separate from any partnership accounts. The pursuer's books were never to be considered partnership books, so far as partnership went, though they might often be evidence by which to come to the partnership accounts; but there was nothing in the account now demanded from which he was to infer that it was a partnership account sought. With regard to the objection, that the adventurers had come in at different times, his Honour observed, there might be cases in which an adventurer who came in in 1840 had a right to ask an account of previous proceedings equally with one who came in at a preceding time, as in the case of a partner coming in with obligation to pay by-gone costs. Then there was an objection, that if a pursuer was liable to account to each individual adventurer there would be endless litigation. Now, without laying down a precise rule as to the obligations of a pursuer with respect to each adventurer, and to the whole body of adventurers, which obligations may vary in each mine, yet he thought it was quite clear that each individual adventurer had a right to some sort of account from the pursuer, independently of that account which the pursuer was bound to give to the whole body of adventurers. The question on the demurrer was, whether any adventurer had a right to some account from the pursuer? It was clear to his Honour that he had such right, and it appeared that the pursuer had refused to give it; the demurrer must, therefore, be overruled, and the defendant must answer.

## MINING CORRESPONDENCE.

## ENGLISH MINES.

## HOLMBURN MINING COMPANY.

Aug. 29.—I beg leave to inform you that the lode in the 110 fathom level west is one foot wide, and producing good stones of ore. In the winze sinking below this level the lode is small, and yielding but little ore. The lode in the 100 fathom level west is eighteen inches wide, and worth about 30s. per fathom; in this level east the lode is eight inches wide, and intermixed with ore; the lode in the eastern slopes, in the back of this level, is still about two feet wide, and worth 30s. per fathom; the lode in the western slopes, in the back of ditto, is 2 ft. 6 in. wide, and worth 60s. per fathom. The cross-cut towards the Flagjack lode, at the 100 fathom level, continues in hard ground. In the ninety fathom level west the lode is one foot wide, and worth 20s. per fathom; the lode in the eastern slopes, in the back of this level, is twenty inches wide, and worth 33s. per fathom; in the middle slopes, in the back of this level, no lode taken down during the past week; the lode in the western end, in the back of ditto, is two feet wide, and worth 30s. per fathom. The cross-cut north, at the eighty fathom level, is still progressing in favourable ground; the lode in the slopes, in the back of this level, is sixteen inches wide, and worth 25s. per fathom. In the eighty and sixty-two fathom levels east are without alteration. The pitches, on the whole, are still looking favourable. We weighed on Friday last July ores (303 tons 4 cwt. 2 qrs.), and sampled August ores, computed 303 tons.

F. PHILLIPS.

## TARTOIL MINING COMPANY.

Aug. 29.—The lode in the forty fathom level, east of Williams's shaft, is ten inches wide, very good tribute ground; this end is much improved since our last. The lode in Henwood's shaft is fourteen inches wide, good tribute ground. The lode in the winze sinking under the thirty fathom level, east of Henwood's shaft, is three feet wide, very good tribute ground. The lode in the thirty fathom level, east of Henwood's shaft, is four inches wide, producing a small quantity of ore. The north part of the Slide-park lode, west of John's shaft, at the adit level, is disordered at present. The tin lode, east of Morcom's shaft, at the adit level, is seven feet wide, and is very good tin ground. We have not progressed so fast as usual in the cross-cut south of Morcom's shaft, at the adit level, in consequence of the hardness of the ground.

H. WILLIAMS.

J. MORCOM.

## TREGOLLAN MINING COMPANY.

Aug. 29.—The north part of the lode, on which we are sinking Baker's shaft, is chiefly composed of spar and capel, intersected with spots of yellow ore; the ground is favourable for sinking. The lode at the fifty fathom level going east is also chiefly composed of spar and capel, occasionally producing good stones of ore. The winze below the forty fathom level, which is about twenty fathoms east of Baker's shaft, is producing a little ore on the north part of the lode. The tribute pitches are looking much the same.

J. NINNIS.

## WEST WHEAL JEWEL MINING ASSOCIATION.

Aug. 29.—The seventy east, on Wheal Jewel lode, is considerably improved since our last; it is now worth 20s. per fathom, and the ground very favourable for driving. In the seventy west, on this lode, we have met with a lode of the cross-course, and are driving north on it to regain the lode. The fifty-seven east, on this lode, is worth 10s. per fathom; and the winze sinking below the fifty-seven is worth 6s. per fathom. The fifty-two east, on south branch, is eighteen inches wide, unproductive; the winze sinking under this level is worth 5s. per fathom. The forty-two east, on Wheal Jewel lode, is worth 6s. per fathom.

S. LEAH.

## TRELEIGH CONSOLS MINING COMPANY.

Aug. 27.—The slant has nearly left Christy shaft, and the kilias is coming in; we may expect the lode soon. We expect to hole the rise in the back of the seventy in a few days, we shall then resume the end, and set the back on tribute. The sixty west is eighteen inches wide, not much mineral at present. In the forty west the lode is two feet wide, with stones of ore. In Good Fortune shaft the lode is three feet wide, hard, but kindly, and worth 16s. to 20s. per fathom. The forty-four east is worth 5s. per fathom; and the thirty-four is large, and worth 10s. to 12s. per fathom.

WILLIAM RICHARDS.

## BEDFORD UNITED MINING COMPANY.

Aug. 29.—I have to acquaint you that the lode in the forty fathom level west is at present small and unproductive, about one foot wide, principally composed of spar and muddle. The lode at this level east is about two feet wide, and, at present, in the back of the level there are good stones of ore in floors, which appear to be dipping east before the end from present appearance, therefore it may be expected that in driving a few fathoms further east, an improvement will be met with. In the thirty fathom level east the lode is unimproved, being about one foot wide, chiefly made up of spar, muddle, and capel, with a small proportion of ore not worth saving; the present unproductiveness of the lode in this level is owing to the hard channels of ground it has to contend with, which it is hoped, however, will be passed through in a few fathoms further driving. In the twenty-third fathom level west the lode is about two feet wide, composed of spar, muddle, and ore, and may be estimated as being worth one and a half tons of ore per fathom; altogether, in its general appearance, the lode at this point of operation promises great improvement. The lode in the winze, and in the back (the pitch), working against the winze, is looking tolerably well, and will turn out about two tons of ore per fathom, and the pitches generally are without much alteration. Our sampling will be on Wednesday, and the parcel will not be more than thirty-eight tons, owing to some of the tributors' ore not being ready, but hope that the next parcel to be sampled will make up for the deficiency.

J. H. HITCHINS.

## UNITED HILLS MINING COMPANY.

Aug. 30.—Williams's Shaft.—No lode broken in the shaft for the past week. Sixty Fathom Level, Eastern End.—Lode three feet wide, two feet of average quality; western end, lode four feet wide, producing some good ore, with a promising appearance. Fifty Fathom Level.—In the eastern end of this level the lode is two and a half feet wide, eighteen inches good ore; we have communicated the end driving east of James's with that driving west of Nettie's winze; in the winze the lode is eighteen inches wide, with some good stones of ore. Eastern Shaft.—Lode three feet wide, eighteen inches on the north part of ore of fair quality. Forty Fathom Level.—Lode two feet wide, producing but little ore. Forty Fathom Level.—In the slopes, bottom of this level, the lode is 2 ft. 6 in. wide, fifteen inches good ore.

NICHOLAS LANGDON.

## TAMAR SILVER-LEAD MINING COMPANY.

Aug. 29.—In the 125 fathom level the lode is from two to three feet wide, one foot of which is saving work. In the 115 fathom level the lode is eighteen inches wide, producing some good work—a promising level. In the 105 fathom level the lode is one foot wide, carrying small branches of ore. In the ninety-five fathom level the lode is eighteen inches wide, composed of capel and ore—good work. In the eighty-five fathom level the lode is one foot wide, at present point. In the sixty-five fathom level the lode is chiefly composed of capel, intermixed with rich branches of silver-lead ore. In the fifty-five fathom level the lode is one foot wide, composed of capel, muddle, and ore. In the forty-five and the lode is two feet wide, composed of capel, soft spar, and ore, but not rich. We have stopped the thirty-five and for the present, as we find it difficult to keep the mine clear of stuff. In the tributors department we have thirty-nine tributors, employing 126 men, on a tribute varying from 14s. to 16s. in the 14s. on the value of the lead ore. We expect to sample to-morrow about seventy-two tons of rich silver-lead ore. At the north end the pitfall shaft is now sunk 16 fms. 2 ft. under the adit, and the men are all present engaged in sinking the pitfall in sinking the necessary pitwork for sinking the shaft, and also for lifting the water from the river, for giving a better supply for descending the ore, &c., in the north mine.

JAMES BRADGATE.

## CHORISTON MINING COMPANY.

Aug. 29.—We have commenced driving west at the twenty fathom level on the north lode (which is in the Flag). This lode will unite with Christy lode about twenty fathoms west. We consider this preferable to a cross-cut direct north to Christy lode, as our object is westward, and we can

drive the twelve fathoms in as little time as the cross-cut. The lode in the sixty fathom level west, is about two feet wide, producing some work, but not a good course of lead as yet. We have been passing through tribute ground for the last six fathoms; we have also cut north four fathoms behind the present end to the north lode, and find it to be large, and letting down much water. It has a promising appearance, yielding good stones of lead. The winze sinking below the fifty fathom level, just over the sixty end, is passing through good very ground, but it appears to be inclining west very fast. The lode in the fifty fathom level west is large, with stones of lead. The forty fathom level, driving east of the old west shaft, is opening some valuable ground. We have had a tolerable good lode in driving the last six fathoms. We are also driving a cross-cut south from the thirty-two fathom level to cut the above lode and run of lead; we have driven four fathoms, and expect three more to drive. We must have similar recourse to the upper levels, for we have discovered this lode to be unwrought to the surface, in this part of the mine. The north lode in the sixteen fathom level, east of Siniashy's shaft, is split in two parts; it still gives a little lead; the ground is favourable, and requires no timber. We have commenced driving south of the above shaft, to cut the Claverton and south lodes. Other operations are going on satisfactorily, both at the surface and underground. The tributors are working with good spirits.

JOHN WERN.

## FOREIGN MINES.

In the course of the week mail packets have arrived from Mexico and the Brazils, but they bring no correspondence from the mining districts.

## MINING NOTICES.

[Under this head we purpose collecting such paragraphs as may appear in the provincial and other Journals, having reference to discoveries and improvement in mining operations at home and abroad. It is hardly necessary to observe, that we must not be considered to admit the correctness of the information conveyed, which, in too many instances, requires cautious investigation—the sanguine expectations of parties in some instances, and the want of honesty in others, throwing a degree of responsibility on a Journal in giving publicity to reports, which we do not intend taking upon ourselves.]

**COLLIERIES IN THE NORTH.**—(From a Correspondent).—An extensive colliery has been "won" at Lonsingh, coal from which is expected to be conveyed on the Clarence Railway within two months; collieries have also recently been "won" at Stanley and Wooley, and at Brancopeth West Park; a colliery has also just obtained its coal at Bishop Middleham, the produce of which will soon be shipped at Port Clarence. There is also every reason to consider as certain that one or two collieries will soon be opened out in the Westerton coal-field.

## MINE ACCIDENTS.

**Combardis Mines.**—A fatal accident happened on Monday week at these mines to P. Latham, who was descending the shaft in a basket, when the chain which suspended it broke, and he was precipitated to the bottom, a depth of 120 or 130 feet, from which he sustained such severe injuries that he died in fifteen minutes.

**Chapel Park Colliery.**—A dreadful accident occurred here on Saturday week; as the men engaged in raising the culm from underground were employed as usual, they carried the "drift" under the shaft of a working that took place a number of years since, of which they were not aware, and a large portion of which fell in upon them, by which one poor fellow, named H. Pickard, lost his life. One or two others, in endeavouring to release him, narrowly escaped a similar fate from a second "run." The body was got out after eight days and nights' digging.

**Wilms' Colliery, near Haverfordwest.**—On Tuesday week, as one of the colliers, named T. Edwards, was coming up the whim, all of a sudden some part of the machinery gave way, which caused the poor fellow to be thrown out, and in a few moments he was at the bottom of the pit a lifeless corpse.

**Explosion near Chatterton.**—An explosion of hydrogen gas took place last week in a coal mine near Chatterton; four men were killed, and several were wounded.

**Bishop Middleham Colliery.**—Coal of good quality was come to in Bishop Middleham Colliery, on the 17th instant, but unfortunately an accident occurred on the following day, which will retard the progress of the works for some weeks to come. By the bursting of one of the engine-boilers the large chimney was thrown down, and two other boilers displaced. No personal injury, we believe, was sustained.—*Durham Advertiser.*

## DISCOVERY OF FOSSILS IN THE VALLEY OF THE REA.

In clearing out a water-course, about thirty yards south of Mr. Edward's Wire-mill, the tibia of an ox was discovered imbedded in undisturbed ochrey gravel, evidently of the same age as the black gravel. The end, which projected a little above the surface of the gravel, is water worn, and the whole bone is stained by vegetable matter and oxide of iron, and rendered much heavier than recent bone; the peculiar white quartz pebbles of the peat and dark gravel may be seen imbedded in soft parts of the cancellated structure, and in holes on the surface of the fossil. Many other remains, chiefly of small animals, have been found; among others, the upper part of the femur of some young quadruped, probably a stag; two femora, a fibula, a tibia, a vertebra, and pair of pelvic bones, ossa innominata of a hare or rabbit. The jaw of a small carnivorous quadruped, with one of the canine teeth remaining. Fresh-water shells are found in some parts of the deposit, and they all belong to species now existing in the neighbourhood—*viz.*, *Cyclus cornus*, *Anodonta oviformis*, *Lymnaea stagnalis*, *Lymnaea peruviana*, *Planorbis cornus*, *Planorbis carinatus*, and *Planorbis vortex*. *Elytra*, or wing cases of beetles, are also found. So far as has yet been seen, no coniferous trees are buried either in the peat or subjacent gravel; the oaks and other trees in the former are reduced to a soft, and, in some instances, a pulpy state, so that they may be cut, like the surrounding carbonaceous matter, with the spade; but those buried in the gravel are frequently as sound as recent wood, but they are usually stained nearly black. The iron held in solution by the water being acted upon by the gallic acid of the wood, gallate of iron is found. Some of the largest trees were found lying diagonally across the cutting of the canal, about seventy-five yards south of the viaduct; one oak measured 21 ft. 4 in. in length, and was 4 ft. 4 in. in circumference in the middle of the trunk, and six feet immediately below the large branch. The lower part of the trunk was split, as if torn from the crown of the root by violence, and this was the appearance of several other smaller trunks lying in the same deposit. The lower part of this tree has been cut by the axe, but on comparing the surface with a portion newly cut, the conclusion has been come to that it has been done since the tree was dug out of the gravel, although no direct evidence can be obtained that such was the case. That the marks were not made in felling it is evident, for it has been clearly cut through, and not merely cut round, and then broken off by the leverage power, always used in felling timber. Like all the oak found in the gravel, it is almost black, and very much heavier than recent oak. The number of annual rings in the section of this tree, show that its age must have been at least 120 years. The lower part of this specimen is in the hall, near the door of the museum, the root end is placed upwards, to show the marks of violence on the lower part. Upon this dark gravel, and its accompanying bed, lies the light coloured clay; and in this stratum, stones and trunks (mostly alder or underwood) are seen, nearly all erect, as they grew, their roots striking down to the black gravel beneath; they are principally hazel and willow; the largest trunk was a willow, and measured three feet in circumference. The tops appear to have been broken off by the force of water, and the woody tissue at the extremity of the stumps is, in most cases, split into filaments, like a brush, evidently by the action of a rapid current, suspending gravelly materials rushing repeatedly over them. The appearance of these plants in the clay was very remarkable, as a spot on the western bank of the canal, about twenty yards north of that arch of the viaduct under which the line of canal passes. The clay was removed, and numerous stones, from four to six inches in circumference, about erect, in a clump, around the larger one alluded to. In this place the clay is more than four feet in depth. Most of the plants in this deposit have both woody tissue and bark well preserved. In some places an accumulation of vegetable materials appears to have been formed, interspersed between two strata of clay. At a spot near where the largest tree was found, and the gravel is but slightly tinged with carbonaceous matter, the wood overlying bed of whitish clay is developed to the thickness of 1½ ft.; in this is a bed of brown tuffaceous sand, averaging one foot in thickness, containing fragments of bones and oak twigs, which appear to have been drifted; on this lies a bed of sandy clay, to the depth of seven inches, of the same light colour as the upper bed, and the whole is covered by a gravelly vegetable soil, about one foot in depth.

**Extinction of Fossils.**—At the same place, in the same stratum, as the alder, a fossil of a plant, which has every mark of the plant of the same kind, and one of the leaflets; the extinction is supposed to have been caused by lightning, which was very vivid at the time.



